REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of October 1, 2004 is respectfully requested.

In order to make necessary editorial corrections, the entire specification and abstract have been reviewed and revised. As the revisions are quite extensive, the amendments to the specification and abstract have been incorporated into the attached substitute specification and abstract. For the Examiner's benefit, a marked-up copy of the specification indicating the changes made thereto is also enclosed. No new matter has been added by the revisions. Entry of the substitute specification is thus respectfully requested.

In view of the election filed September 7, 2004, claims 1-49 and 51-53 were withdrawn from further consideration, and only claim 50 was treated in the outstanding Office Action. In this regard, the Examiner rejected claim 50 under 35 U.S.C. § 102(b) as being anticipated by the Schoennagel reference (U.S.P. 4,298,453). However, as indicated above, all of the original claims, including elected claim 50, have now been cancelled and replaced with new claims 54-57, and all of the new claims read on the elected invention of Group II. For the reasons discussed below, it is respectfully submitted that the new claims are clearly patentable over the prior art of record.

The invention recited in new independent claim 54 is directed to a gas reforming method in which the catalytic activity of the catalyst used for reforming the gas can be quickly and efficiently recovered. In particular, the method comprises gasifying combustibles in a gasification furnace, and the gasification furnace includes a gasification chamber for gasifying the combustibles to produce the gas, a char combustion chamber for combusting char produced in the gasification chamber, and a partition wall separating the gasification chamber from the char combustion chamber. The partition wall has a port for allowing a fluidized medium to be moved between the gasification chamber and the char combustion chamber. The method further comprises reforming the gas produced in the gasification chamber using a catalyst so as to thereby produce a fuel gas, *moving the catalyst and the fluidized medium from the gasification chamber to the char combustion chamber through the port in the partition wall*, and recovering the catalytic

activity of the catalyst in the char combustion chamber *by combusting carbon deposited on the surface of the catalyst.*

As explained on page 9, lines 13-23 of the original specification, hydrocarbons with high molecular weight cause various problems when the hydrocarbons are contained in fuel gas supply to a fuel cell. In particular, these hydrocarbons lower efficiency and cause carbon to be deposited within the fuel cell. In order to address these problems, a catalyst is used to reform the gas so as to thereby produce a fuel gas suitable for use in a fuel cell. Unfortunately, when carbon becomes deposited on the surface of the catalyst during the reforming process, the ability of the catalyst to properly reform the gas will be significantly reduced.

The present invention has been developed in order to minimize the likelihood that the ability of the catalyst to function properly will diminish over time. In particular, as explained on page 51, lines 4-17 of the original specification, because the catalyst is moved from the gasification chamber to the char combustion chamber through the port in the partition wall separating the gasification chamber from the char combustion chamber, the carbon that has been deposited on the surface of the catalyst can be combusted within the char combustion chamber. As result, the catalytic activity of the catalyst can be fully recovered so that fuel gas suitable for use in a fuel cell can be produced in an efficient manner. Furthermore, because recovery of the catalytic activity of the catalyst is performed in the char combustion chamber while combustible material is simultaneously being gasified in the adjacent gasification chamber, there is no need to interrupt the process of gasifying combustibles in order to recover the catalytic activity of the catalyst. Therefore, the overall efficiency of the gas reforming method is greatly improved.

The Schoennagel reference discloses a coal conversion device including a catalytic devolatilization zone 10 and a regenerator 20. As explained in column 9, lines 45-60 of the Schoennagel reference, coal is devolatilizated within chamber 10 using a heated catalyst. Then, as explained in column 10, lines 48 though column 11, line 18 of the Schoennagel reference, the catalyst and char are transferred from the chamber 10 to the regenerator 20 through line 17 (see figure 1), where a gasification reaction is performed to produce a synthesis gas (see, in particular, column 11, lines 10-18). The Schoennagel reference does not, however, disclose or suggest gasifying combustibles in a

gasifying furnace that includes a gasification chamber *and* a char combustion chamber. Moreover, the Schoennagel reference does not disclose or suggest moving a catalyst and a fluidized medium from the gasification chamber to the char combustion chamber *through a port in a partition wall separating the gasification chamber and the char combustion chamber*. Instead, as explained above, the catalyst is moved between chamber 10 and regenerator 20 through lines 17 and 22. Finally, the Schoennagel reference does not disclose or even suggest recovering the catalytic activity of the catalyst in a char combustion chamber by *combusting carbon deposited on the surface* of the catalyst. Thus, it is submitted that the Schoennagel reference does not anticipate the gas reforming method recited in new independent claim 54.

As explained above, the Schoennagel reference does not disclose or even suggest the steps of gasifying the combustibles, moving the catalyst, or recovering the catalytic activity of the catalyst, as recited in new independent claim 54. Due to the absence of any suggestion of these steps, it is submitted that one of ordinary skill in the art would not be motivated to modify the Schoennagel reference so as to obtain the invention recited in new independent claim 54. Accordingly, it is respectfully submitted that new independent claim 54 and the claims that depend therefrom are clearly patentable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted,

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